AVICULTURAL MAGAZINE

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HYBRID VIRGINIAN × EUROPEAN EAGLE-OWL.

Left to right : Young bird, mother, one-eyed father.

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THE JOURNAL OF THE AVICULTURAL SOCIETY
AND THE AVICULTURAL SOCIETY OF AMERICA

Vol. 57.—No. 6.—*All rights reserved.* NOVEMBER-DECEMBER, 1951

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By D. H. S. RISDON (Dudley, Worcs., England)

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It would appear [illegible] appetite passes, and then success is achieved.

I experienced rather a similar occurrence many years ago with Blackbirds. For the first two years the old pair let their young die from lack of live insects, but in the third and successive years I saw them taking artificial food to the nest and young were successfully reared.

To return to the Owls at Dudley, this particular pair behaved true to form. Incidentally, the Virginian is the cock, and he has been blind in one eye for a long time. From what I can gather, the pair have shared the same enclosure on and off for many seasons. The hen has laid regularly, but whether she has been with the Virginian or not her eggs have always been infertile.

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By D. H. S. Risdon (Dudley, Worcs., England)

As there appear to be several records of the straight breeding of both the Virginian and European Eagle-Owls, a hybrid between the two species is perhaps not very surprising, but nevertheless, as it seems to be the first authenticated cross, I thought it worth while recording in the Magazine.

Both parents are among the oldest inhabitants of Dudley Zoo. In fact, they came to Dudley as part of the original collection from Oxford Zoo on the latter's disbandment in 1937, so their actual age is not known.

On reading through Mr. Prestwich's *Records of Birds of Prey Bred in Captivity*, one gathers that success with Eagle-Owls generally comes when the birds have been many years in captivity, first efforts usually ending either with infertile eggs or callow young being killed and eaten by the parents.

Infanticide is, I believe, often the experience with birds of prey deprived of live food, the explanation being that the desire to kill their own prey overwhelms the parental instinct to such an extent that the old birds cannot resist making a meal of their offspring.

It would appear, however, that after many years in captivity, this appetite passes, and then success is achieved.

I experienced rather a similar occurrence many years ago with Blackbirds. For the first two years the old pair let their young die from lack of live insects, but in the third and successive years I saw them taking artificial food to the nest and young were successfully reared.

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Last year, my first season at Dudley, the European Eagle-Owl was

in an aviary by herself. In the spring she made a scrape on the gravel floor of the flight right in the open and laid two or three eggs, of course infertile.

This spring, however, due to shortage of space, the old one-eyed Virginian, of whose sex incidentally we were in some doubt until this year, was again put with the European, and to give her a fair chance a heap of rough dried grass was placed in the darkest corner of the concrete floor of the shelter shed, behind the door and out of sight of the public gaze.

As we never really expected success, I am afraid that accurate records were not kept, but during May a rough nest was made in the grass. Eggs were laid and incubation commenced. The number of eggs laid and number of young hatched are not known, as the hen sat tightly and was never caught off the nest, which she guarded ferociously, snapping her bill and puffing herself out threateningly at one's approach.

Between three and four weeks later a careful watch was kept, and eventually it was reported to me that part of at least one downy young one had been seen under the hen when she raised herself up in defence of her nest.

From then on the birds were disturbed as little as possible, and whenever procurable young rabbits, freshly killed and whilst still warm, were put in the aviary. There is no doubt, however, that cold dead " shop " rabbit and butcher's meat were taken as well, and the youngster grew apace.

Throughout, Mr. Jack Westwood, who looks after the Owls, told me he never saw the cock actually feed the young one. It took food in lumps to the nest, which presumably the hen dismembered and fed to the youngster.

At quite an early age, when still covered in down and less than half grown, the young one would walk about the floor of the shelter, occasionally appearing at the doorway to take a look round. Towards the end of July it became more or less independent of its parents, and although still partly covered in baby fluff, would sit about in the open sunning itself. At this stage it could also apparently feed itself, although it is difficult to say whether or not it still received a helping hand from its parents.

They have always been shy, and I myself never saw them feed it in the open at any rate.

Now (mid-September) our young hybrid is almost as big as its mother the European Eagle-Owl, and considerably larger than its father, and as the adult feathers appear more and more through the down it is evident that the markings are going to be a mixture of the black smudging of the Virginian and the dark streaks of the European. At present its eyes are the straw colour of the adult Virginian. There

are, as yet, the merest little bumps where the "ear tufts" will eventually be. The facial discs are well developed. The colour of the nestling down was pale fawn, faintly barred with darker wavy lines.

* * *

NOTES FOR 1951

By THE DUKE OF BEDFORD (Woburn, Beds, England)

The breeding season of 1951 has been the best I ever remember—for coccidiosis microbes—and the worst for Parrakeets. This, I fancy, has been the experience of some other aviculturists also. The excessively wet winter and the complete absence of anything deserving to be called spring until the middle of May seemed to affect both the fertility of the old birds and the stamina of their offspring. (In the latter connection, it may be interesting to note that the percentage of weakly Red Deer calves in the Park this summer is quite abnormally large.)

A hen Barraband which bred last year was beginning to come into breeding condition in April, when she fell a victim to coccidiosis. A pair of Princess of Wales' hatched two young, but killed one when nearly feathered by feeding it on unhusked millet, a lazy and disastrous habit to which individual Grass Parrakeets are also prone. The survivor, a strong bird but badly plucked by the hen, left the nest in due course. The hen started to lay again when coccidiosis claimed her also. The same fate later befell a young hen Rock Peplar trained as a day-liberty bird. According to my experience, no treatment will save a Polyteline Parrakeet once it gets coccidiosis, nor will lactose in the drinking water always prevent it.

The young Princess of Wales', as recorded elsewhere, I trained as a day-liberty bird, but after some weeks of exemplary behaviour he unexpectedly blotted his copy-book by flying several miles away and staying out for the night. He returned early next morning, but I judged it prudent to shut him up again as, with Rock Peplars, such behaviour is a prelude to ultimate complete departure. The old breeding pair of Rock Peplars reared four good young ones, all of which were successfully trained as day-liberty birds, though one has been lost from the cause already mentioned. Incidentally, what rot those people talk who try and make out that if an animal is perfectly healthy and is fed on wholesome food not grown with the aid of artificial fertilizers, it can never get ill from microbic infection! Like many enduring falsehoods, the theory has an element of truth mingled with it for there are *some* diseases, notably those caused by parasitic worms, which *some* animals can resist better when well fed than when undernourished; with this qualification, however, the theory is, as I have said, rubbish. A bird fed on nourishing seed

and grain, fruit, etc., with access to unlimited wild foods *not* grown with artificial fertilizers may be the picture of health, well-grown, in perfect feather, and abounding in playful energy, and high spirits. Yet the day comes when it gets a virulent microbic infection. In a few hours it is sick, and within a few days it is dead.

A hen Barnard that bred successfully last year laid a large clutch of eggs at the end of April. On 30th April, however, we had a terrific blizzard, and the aviaries were darkened by a heavy fall of snow. The Barnard understandably decided that the Australians were right, after all, in considering April the beginning of winter, and deserted her nest. Later, when the thaw came, she began to lay again, but got egg-bound with a malformed egg, and when she had laid it in the hospital dropped into moult.

Brown's Parrakeets, which bred last year, nested rather late and lost their young at about ten days old. A young pair of Pileated bred at Keston, and still in immature plumage, did the same.

Derbyan Parrakeets and Green-winged Kings, both pairs very old birds, laid two clutches of eggs as they did last year, which, in spite of wheat germ oil, were infertile.

Crimson-wings reared one young one in their first nest, and then, very unexpectedly, went to nest again and hatched four more. These also left the nest, but one broke its leg a day or two later and, as I was carrying it to the birdroom, it escaped out of my hands and flew away. It was seen the following morning, but not again. The old birds are excellent parents, feeding their children when in heavy moult themselves.

The lutino Nyasa Lovebird and his mate have got no further than eggs with young dead in the shell. Ordinary Nyasas have reared five young.

The old albino hen Roseate Cockatoo mated to her son, raised my hopes by going into a nest quite a lot, but she did not lay.

I was unsuccessful in obtaining a suitable mate for the other white-bred cock. The first hen I got was bad on her feet from too long caging. Another bird I selected as a hen in a rather dark room, behaved exactly like a hen when first turned out in the aviary. When I got " her ", " she " had a *very* dark red breast, and I thought a red eye. " She " has now, without a moult, assumed a pink breast of normal shade, and a dark eye, and appears to be a cock. Roseates can alter their breast colour without a moult, but I don't think they alter their eye colour and sex except when they want to play a bad joke on their owner !

A normal pair of Roseates reared two good young and one rickety one that had to be destroyed in their first nest and three in their second, and the Gang-gangs reared two good young, both cocks.

I have had a couple of hen Little Bluebonnets for about three years.

One has had several illnesses, but it was her sister who went down badly with coccidiosis this summer. I have never known a small Parrakeet so very ill for so long. For several days we gave up all hope of her recovery, but in the long run she did get well, not quickly as most birds do once they begin to mend, but very slowly like a human patient after a severe illness.

Coccidiosis, I find, is not very difficult to distinguish from enteritis in the early stages. A bird with enteritis has the droppings much changed in appearance but, in the early stages of coccidiosis they look more normal though later they have a tendency to clog the vent, and need removing. Coccidiosis is certainly the worst disease we have to contend with at Woburn, attacking birds of all kinds, both wild and domestic. One of our leading veterinary authorities takes a pessimistic view of the ailment throughout the country, saying that during the past quarter of a century it has become much more prevalent among all classes of livestock, and that our knowledge of methods of prevention and cure has not progressed to the degree necessary. Among poultry breeders etc., there appear to be two schools of thought. The older holds that if an infected bird recovers, it is thereafter a " carrier " and a menace to the health of young stock ; the other, and newer, considers that birds which have recovered are, if anything, more satisfactory afterwards in every way. On the whole I am inclined to agree with the new view rather than with the " carrier " view. From mid-July onwards the Budgerigars at liberty provided me with an unwelcome amount of experience, although I realize that I have still quite a lot to learn ! The incidence of the disease was rather curious. Young birds are far more susceptible than old ; cocks far more susceptible than hens ; birds with access to the natural soil are more likely to get ill than those confined in aviaries with tiled floors. With the exception of one young bird that had strayed and been caught and returned in rather poor condition, all the fatal cases—about six—were among young birds bought and turned out in the liberty aviary or bred in a closed aviary at Woburn, and later put into it. Of the young birds affected, only two were saved, both after rather long and severe illnesses. In the case of two young birds—brother and sister—the disease followed an unusual course. The cock appeared to recover after a slight initial illness, but a few days later, and before he was turned out, he had a relapse and died. The hen also recovered after a slight illness, and again flew at liberty for some weeks, when she developed a sudden and severe attack, and died. Thus, although I believe an attack *does* usually confer subsequent immunity, there seem to be exceptions.

In the hens' " resting " aviary, which has a tiled floor, three hens, after breeding, developed mild bowel trouble which looked rather like coccidiosis, and recovered without ever being seriously ill.

Three adult cocks fell ill in the liberty area and recovered. Two were mild cases ; the third a severe one. Two fledged young belonging to this latter bird died in the nest and clearly caught the infection from him. The youngest nestling and the hen were not infected. One of the mild cases, on recovery and return to the aviary, reared a large brood, all of which remained healthy. No young birds got ill in the closed tiled-floor aviary, but many of the same got ill or died, some weeks after transfer to the liberty aviary, which also has a tiled floor but, of course, access to the soil outside.

Next year I intend to experiment with birds moved from the closed to the liberty aviary in the egg and very young nestling stage to see if it makes any difference to their susceptibility to the disease when they are older. If it does not it will indicate the presence of a hereditary factor. It is rather difficult to say how far sulphamezathine, seven drops in two ounces of water given for five day periods—and lactose—one tablespoonful dissolved in a pint of boiling water and cold water added to make one gallon—have been useful for cure or prevention. They are not 100 per cent successful but, on the other hand, without them losses might have been heavier and recoveries fewer.

* * *

ALARIO FINCHES

By R. GARNER (Nottingham, England)

I have always had a great interest in the keeping and breeding of foreign birds, and before the war, was successful in breeding Zebras, Javas, Cuthroats, etc., in outside aviaries. In 1939 I had quite a few foreigners, which all had to go, as I was called to the Forces at the outbreak of hostilities.

All through the war I longed to start up with birds again, and as soon as I was demobilized I put up my garden aviary, but owing to the import licence restrictions no foreigners were available, so had to stock it with a few Canaries. These did well, and the next year a few foreigners came on the market at rather high prices, so I acquired three pairs of the commoner species. One evening I noticed that the Keston Bird Farm was advertising one cock Alario Finch, so I sent for him, and in due course he arrived in good feather and in full song, so he was placed with my other six foreigners in an indoor aviary in my birdroom. About six weeks later the same firm advertised one hen Alario, so of course I phoned right away for her, and she duly arrived in good feather, but not much to look at, being something like a small hen Redpoll.

She was also placed in the same aviary as the cock and the other

foreigners, as it was too late in the season to think of breeding. In the spring the pair of Alarios was given an indoor aviary to themselves, and were duly supplied with nest boxes, but no attempt was made at housekeeping either that year or the next.

This spring I placed the Alario pair in a small outdoor aviary, about 12 feet by 8 feet, with a small shelter portion, together with three pairs of Canaries, and supplied several nest pans and small nest boxes made of wood, about 8 inches by 4 inches, with a half open front. These were placed both in the shelter portion and in the outside flight, and a small quantity of hay was placed in each.

The Canaries commenced housekeeping, and shortly after I was pleased to see that the Alarios were interested in one of the boxes in the outside flight, and very soon a nice little nest was built of hay and feathers in one corner of the box. The first egg was laid about a week later, followed at daily intervals by three more. The eggs were of the same size and very similar to those of the British Redpoll.

The hen sat very closely, and on about the tenth day I found one egg on the aviary floor, which had either fallen or been thrown out of the box. On examination this egg proved to be well advanced in incubation, and contained a well-formed chick. About three days later the first live chick appeared, followed by two more. Both parent birds were very busy feeding the chicks (brown bread and milk, Canary rearing food, soaked seed, and plenty of fresh lettuce leaves being provided).

All chicks did well for four days, when one appeared to fail, and died. The remaining two grew very quickly, and after eighteen days left the nest, and were similar in colour to the hen. About four weeks later one chick showed signs of the white patches and black head of the cock bird, while the other remained in the hen-like attire. I imagine I have a pair, although the believed cock has not yet assumed the black head and dress of the adult cock, but shows even more distinct signs of doing so, and the other still remains in the hen's attire.

The adult pair have had another attempt at housekeeping, and this time laid three eggs in the same nest box as the previous family was reared. Two chicks hatched, and one died after about a week, and the other, which I think is another young cock, left the nest on 18th August.

PS.—Since writing the above article I am able to confirm that the first two chicks are definitely a pair, as the cock has assumed its full male attire. The youngster from the second nest is also showing male characteristics. All are doing well and are exceptionally strong.
28th October, 1951.

* * *

BIRD COLLECTING IN THE BELGIAN CONGO

By CHARLES CORDIER (New York, U.S.A.)

In October, 1948, in the company of my wife, I set out for the Belgian Congo to assemble a collection of live animals for the New York Zoological Society. At the top of our list of specimens wanted stood the Congo Peacock, several other winged rarities, and many mammals.

From New York the Norwegian freighter which we boarded made a beeline for the port of Dakar, French Senegal, and then proceeded stopping here and there at ports of the Gold Coast. Twenty-five uneventful days later we reached the mouth of the Congo River and then raced upstream against the swiftly flowing muddy current to the port of Matadi.

Contrary to our expectations, the Congo River in its lower reaches bears no resemblance whatsoever to the majestic sea-like aspect of the Amazon. The former runs very deep, compressed between high hilly banks which, in their bareness, bring to mind a Chinese landscape.

There we set foot on Congo soil and kept an eye on the unloading of our voluminous equipment, which included an 8 cu. ft. kerosene refrigerator, which later proved absolutely indispensable. Two days later we boarded a train which was to take us, surmounting an altitudinal difference of perhaps 600 feet, over hilly and bare country, to the modern capital city of Leopoldville. We were serene in our knowledge the duffel was following right behind us and, subsequently, realized we had been lucky. Unaccompanied baggage often languished at Matadi harbour and elsewhere for half a year or so.

As our train wound its way upwards, stopping at neat stations embellished with flower beds, nothing brought to mind the epic struggle and tremendous cost in human lives and capital it took to build these narrow-gauge steel ribbons linking the upper navigable part of the Congo River with the sea.

At Leopoldville we groaned at having to dip deep into pockets to pay customs duties assessed on everything we had with us, no matter whether old or new. The competent Forestry Service issued a collecting permit, at a substantial figure of so much per head to be collected—and sent us forth with its blessings.

We now boarded with our duffel a cargo sternwheeler, somewhat slower than a passenger boat, bound for Stanleyville. Our vessel, flanked by two barges as big as herself, first ploughed through Stanley Pool and then proceeded up one of the many Congo River channels. It took twenty-one days to cover the next 1,000 sinuous miles of the Upper Congo, island-dotted throughout its length. Every evening the boat would tie up for the night at the river's bank to take on firewood.

The waters of the river were at flood level; no sandbanks were showing. The vegetation reached right to the water edge and, consequently, during the whole three weeks we rarely saw anything alive, except an occasional crocodile, which the ship's captain would use for target practice with his army rifle, some Cattle Herons floating seawards on clumps of vegetation, snowy white and black Angola or "Palmnut" Vultures (*Gypohierax angolensis*), slowly cruising overhead while deciding whether to fish or get an easier meal of palm nuts. Incredibly as it sounds, this bird is responsible for the spreading of the Elais Palm over much of the forested part of the Congo. Another large black and white bird, the Hornbill, with its conspicuous two-storey beak, would cross the river high above in rapid flight.

Gone into limbo with the days when you could trade beads for valuable souvenirs, or a native would do anything for an empty tin can, is the high forest which used to cover the Congo rivers banks. As on a highway, the sides are lined with fields, immense palm nut tree plantations, villages, or just plain uninspiring second growth forest.

At Stanleyville, where a series of falls interrupts navigation, we disembarked, glad to be done with major travelling, and were gratified to find all our belongings on hand and intact. We managed to store the nearly sixty cases temporarily and set out in our jeep truck, which we had brought with us, with the intention of locating a likely ground for Peacocks and a convenient site for a collecting camp.

As many of our readers will remember, this mysterious bird became only known to science when Dr. James Chapin, of the Museum of Natural History of New York, in 1936, while on a visit to the Congo Museum, at Tervueren, in Belgium, spied, relegated on a cabinet in a corridor, a pair of large mounted birds labelled Crested Peacock. A barred broken feather protruded from one of the wings and, upon closer examination, it proved identical to a puzzling feather which Dr. Chapin took from the hat of a native in the Congo twenty-three years earlier. When in 1937 Dr. Chapin returned to the Congo to look for *Afropavo*, already skins collected by alerted friends awaited him.

To-day several dozen skins repose in three or four museums; I contributed some skeletons and brought back six males and one female alive; I also collected chicks, which up to then were unknown. It has been established that its area of distribution covers an immense part of the forested Congo territory and yet we know little about its habits and much less about its nesting.

We headed in the general direction of Ikela, 180 miles south-west of Stanleyville, as the crow flies, where, during the last war, a government employee had kept two pairs and obtained from them a clutch of two eggs. This gave rise to a short notice I remember having seen in this very publication, erroneously reporting that the Peacock had been bred in the Congo.

As, on a Sunday, our shiny, canary-coloured jeep bounced and jolted along the dirt-highway, which we found to be bad, and worse in most of the forested section of Stanleyville Province, we were amazed at the reaction this sight provoked in the villages we traversed. Shouts of amazement would be heard, women and children would come streaming out of the shade of huts and the men would get off their deck-chair-like seats or resting platforms in their palaver houses open on all sides, tightly packed with humanity and, sheltering besides the log drum. On reaching the end of a village, usually flanking the highway for half a mile and more, we would drive through widely gesticulating, shouting, and yelling crowds, and the combined noise would be like the droning of a giant bee-hive. I have been told that the same enthusiastic reception is still being given to the train that has run bi-weekly from Stanleyville to Ponthierville for the last fifty years.

After driving for several hours we had no trouble collecting a crowd and unveiling to these primitives our paintings in almost natural size of male and female Peacock. The first reaction was of consternation and query; then a brighter lad said "Itundú", and they all took it up. Our "wapi"—where—brought forth "Yaolonga" and pointing up the road we were on. The map revealed such a village name and, with the kind help from white employees of a rubber plantation, we were soon installed in the government resthouse of Yaolonga. We were now not quite half-way to Ikela and on the fringe of the no-man's land found on the west bank of the Lualaba river. We had never been able, up to then, to find out for sure whether there really was a passable road to Ikela; therefore, already tired, we thought this might be as good a spot as any.

Next morning, at daybreak, I started out with two guides into the forest. After a dog-trot of several hours, which the natives seemed to keep up effortlessly, while I was sweat-soaked and somewhat winded, a welcome stop ensued as our progress got barred by two almost naked, spear-carrying hunters straining under heavy loads. An all-pervading sweetish smell of decaying flesh, mingled with an acrid smoky tang came from the charred lumps being carried, and I got introduced to their brand of jerky "nyama", a delicacy the average native mostly dreams about. A watery, pinkish exudate had collected from the stuff and was trickling down the porters' backs. Suddenly I noticed a bunch of blue-edged wing feathers tucked under a vine holding a load and . . . Congo Peacock feathers they were. My halting inquiries brought forth the obvious explanation. The male bird had stepped into the foot sling of an antelope trap. I could hardly get over the fact that of the very first day of my assignment I was that lucky. There seemed to be nothing to this collecting. With renewed vigour I followed my fast progressing guides. There

was very little undergrowth barring our way and I complimented myself on this feature. Later, however, attempts at penetrating the Congo forest in other sections brought out conditions under foot that were very bad. To get my breath back, once in a while, I would stop and inquire " Itundú wapi "—where ? They would stop, point to the ground, and make a sweeping gesture. To gain more time I would say " haico "—there aren't any ; they would then affirmatively stamp their feet and say " yes there are ", looking annoyed. Once, near a little brook, they pointed to scratch marks made by an Itundú ; a further moment's rest was later gained by examining a dropping right in the trail, also coming from an Itundú, according to them.

Around noon we reached a typical hunting camp of the Bamboli Negroes, consisting of a long string of thatched huts that were so low they seemed play-houses for children. Outside fires were smoking under stick platforms and one native was busy undoing leaf-covered parcels of meat literally alive with maggots. He would scrape most of those off with a knife and then place the pieces over the smoky fire. Later, I have seen jerking of meat done in the camps of other tribes but never again under such conditions. Wrinkling one's nose and remonstrating will bring the rejoinder that the meat gets eaten, not the smell. . . . Little by little several strapping fellows joined us each carrying one or two medium-sized Gaboon Duikers, some fresh, others smelly and fly-blown. I did then not yet realize that these genial natives were daring non-conformists, envied by thousands of rubber workers living on huge estates nearby.

After reconnoitring other sections of the same forest on successive days, without finding any more traces of Itundùs, we returned to Stanleyville to begin an extensive search for a base camp. Our choice fell on an empty government house, a huge, thatched, stick-and-mud affair situated about 40 miles east of Stanleyville, on the road to Bafwasende. The natives there assured me that the Peacock was to be found in the surrounding forest. In the months to come their assertions were never proved, however ; there was hardly any other choice as housing was very scarce. I also knew that, further east, near the Tschopo river, Peacocks had been found.

Mr. Bridges, the New York Zoological Society's Curator of Publications, soon joined us, flying in from New York, with the objective of providing the members with a first-hand account of how collecting is done.

About 40 miles east on the Bafwasende road, and 24 miles south of it, used to be the mining camp of Ayena, where twelve years ago, Dr. Chapin had personally collected Peacock skins. I decided on this location for a trial. There was one serious drawback to it as the mining camp had been abandoned with the road probably claimed back by the bush. We lost no time to realize the scheme by rounding

up an interpreter and porters. The ensuing difficulties, confusion, and late start between 9 a.m. and 10 a.m., soon made it clear to me that back home someone had failed to make contact with the Colonial Administration at Brussels, which action alone brings out the big Welcome Mat by the somewhat autocratic local administration. Obviously, the functionnaires who have the hardest time to make the natives understand that cash crops are good for them and tending fields a virtue, not to be left to their wives altogether, look with somewhat jaundiced eyes upon requests for activities disruptive of such teachings. Their black charges ask for nothing better than to follow a call into the woods with the prospective feasting on meat. As matters stood throughout our stay, we rarely received all-out government help and had mostly to rely on the appeal of greed upon the natives by offering unheard of rewards for the animals wanted.

The road to Ayena was, indeed, impassable for vehicles, and all eleven bridges had disappeared. A narrow trail often obstructed by windfalls, but mostly by second growth, pulled down and trampled by elephants, was all that was left of it. Towards evening we camped, perhaps at the half-way mark, and the following day we reached the natives' hunting camp, a crudely built roof of abandoned corrugated iron sheets. How far we were then still from the former site of Ayena was not clear, but the spot itself seemed a favourable location from which the natives fan out to set their traps or to dig skilfully long rows of oblong pits with smooth walls sloping slightly inwards, the bottom studded with slender hardwood spikes of irregular lengths. A marvel of murderous ingenuity goes into these constructions.

I set a number of natives to construct an extensive line of footslings. They choose to work not far from camp and bunched together, getting into each others' way. As the noise from our camp reached the trap line this effort was entirely wasted. We had hardly settled down when the people started to complain about the lack of food. The village head did not or could not comply with instructions to send porters with more food to us, and most of the men had to be sent back for more provisions.

It became apparent that the real mining camp had been situated much further in, and I persuaded one of the hunters to guide me in a search for it and the Peacocks that was to last two days. We left early and walked at a sharp pace until noon, past innumerable scratch patches of the Crested Guinea-fowl. For a time we followed a smooth elephant path. Often my guide would stop abruptly and then I would notice a vine stretched taut across. These were triggers of suspended poles high up in the foliage ready to crash on to unsuspecting pachyderms. Towards early afternoon my native stopped often, and I noticed our passing seven times the same stilt-rooted tree. Obviously we were lost. . . . We circled for hours, then gave up and decided to

build a temporary shelter. I helped in the gathering of roofing leaves, stepped into a masked hole, heard a crack, and realized, before falling to the ground, that the bones of the right leg above the ankle had snapped.

I spent a night of agony on the ground, with the native squatting and dozing near a fire in a little shelter he had built for himself at a short distance. Toward one in the morning he drew my attention to a call echoing through the perfect stillness : " ngowe, ngowe " it sounded. Then it was followed by an answering call on a lower pitch : " ngoá, ngoá." The sound was repeated from another direction, and very faintly still from another. I had listened for the first time to the nocturnal cry of five or six widely scattered Congo Peacocks, and was to hear this performance repeated twice more during this night of all nights. . . .

I had occasion to hear this raucous utterance again in other forest sections but had never the pleasure of being accompanied by hunters with enough guts to go out into the night to locate the roosting tree, to surround it at daybreak with nets, the bird getting captured when it comes down to the ground, late it seems, between 7 and 8 o'clock. The habit of giving its position away at night is, perhaps, the reason, according to Dr. Chapin, why the Peacock is not found in the Ituri forest which begins about 100 miles north-east of where I was. Pigmies dwell in it and it is entirely possible that these stalwart and ferocious hunters have been able to exterminate it. The more so, I agree, because our camp was on the north-eastern fringe of its range. The species there is to be found only at widely scattered spots and seems to have no push left to extend its range. Speaking of pigmies and the birds' range, it comes to my mind that about a year later, 500 to 600 miles south-west of Ayena, at the mission station of Loto, Province of Costermansville, a forest pygmy brought me a not quite adult, dying female Peacock which had fallen into a buffalo pit.

The next day my companion, accompanied by natives, came to my rescue, summoned by my guide. I was tied to a pole, my nose one inch from it, and thus carried, passing two more nights in the forest before reaching the highway and later the hospital at Stanleyville.

This mishap put a serious cramp into my activities. At my suggestion, Mr. Bridges took *Afropavo* collecting over and proceeded to Mangandu, near Lubutu, about 225 miles south-south-east of Stanleyville, where I had heard specimens were collected before. Thanks to an energetic black government official, spurred by promises of a substantial " matabishi " (reward), the inhabitants of a whole village were dispatched to a forest only four or five miles from the highway. There the bird seems not to have been driven back ten or more miles from the road because it probably made a comeback in a section hunted clean of other game previously. Perhaps, there, the

natives are being pushed to raise food for great numbers of men working in the gold mines and have not enough time and energy left for going after such scarce and unrewardingly small feathered " meat ".

I reckon a good thousand traps were set out and, as a result, in the course of three or four weeks, six or seven *Afropavo* females were captured which were in various stages of disrepair. Some were dying, others had broken legs which proved that the traps were put up too far for supervision from camp and that these rather sullen and backward Bakumu people did not care and used tension poles for the traps which were too strong, better suited for holding small Antelopes. When such is the case, birds are left dangling by a leg. Mr. Bridges brought to our camp at Bongena, where I hobbled around after an eleven days' stay at the hospital, once two and then one female Peacock. To do so he made the hazardous drive at night. Of these specimens, one died, unable to swallow the morsels of meat and boiled eggs I forcibly pushed down her gullet. Of the other two, hardly able to stand on their legs for a moment, one died days later and the remaining bird rallied and started to feed on grubs, small pieces of raw meat, boiled egg, and, finally, on an insectivorous mixture suitable for Thrushes. This specimen remained exceedingly nervous throughout the time we had her, was distraught by noises, and generally behaved " headless " until its end, which came about some eight months later. She probably never fed sufficiently, and in the end the hookworms got the better of her. After Mr. Bridges had given up his camp at Mangandu we were several weeks later electrified by a telegram mentioning a captured " Itundú ". We practically rocketed over the several hundred bumpy miles in the jeep and found a male, perhaps a year old, dark blue underneath, back greenish-blue, with the stiff white brush on its forehead, which in some males attains about 3 inches, having started to " sprout ". The bird had been kept on evil-smelling grubs in poor light but seemed all right. I had no trouble inducing it to feed on an insectile mixture. It developed into a fine, steady specimen thanks to a spacious compartment, partially roofed over and planted, sealed against flight on the sides with closely spaced poles and with strong fish netting above. Unfortunately, this bird came to an untimely sudden end eight months later through poison administered by a native, I believe.

In April, 1948, Mr. Bridges returned to the United States. In June we moved our main camp to a spot six miles south of Stanleyville to lessen supply difficulties. By October only was I able to set out again in the search for more Peacocks. With a newly-acquired 3 ton truck, with an extra long body, I headed for the Adventist Mission, which is situated about half-way between Kirundu and Lubutu, south-south-west of Stanleyville. I stayed over a week with a dozen natives in the

forest at a spot vaunted for its Peacocks. A trap line half a mile in length was set up which rewarded us with a single Crested Guinea-fowl, useless to me on account of a broken leg. Peacocks were never even heard ; instead, once deep in the night there was a general alarm among the natives brought about by the distant hissing and growling of Leopards having, possibly, an altercation about division of spoils. After giving up this fruitless search I rolled on with the truck to Lubutu, and from that post on northwards to the end of a short mining road. At Lubutu the competent administration official provided me with the one and only game warden, who in my mind's eye still stands out on account of his jug-ears, the lobes of which had huge circular holes, through which I found it fascinating to look at the scenery beyond. The usually flat landscape hitherto encountered changed into hilly, almost mountainous country, and it was thrilling to realize that now Mountain Gorillas were around. At Mundo, the road's end, the native administrator, on superior orders, provided the necessary porters and I limped on, on a wide trail, still headed north. My leg was then still giving me considerable trouble. On the third day of March the Maiko river was reached and there I was told there was no facility to cross it and to travel on the trail leading through uninhabited forest to Angumú. According to information obtained from Dr. Chapin, the Peacock is quite common on that trail, but back at Lubutu, later, the government men said they simply did not want me in that section for fear I would spy on their illegal hunting camps.

However, Peacocks were supposed to be right across the river and, with the aid of the game warden, I believed for a time, I had managed to send a lot of scouting parties out to locate the birds, for us to follow as soon as a favourable spot had been found. After a ten days' wait, a triumphant party of two men brought in the carcass of a leopard trapped in a noose. Voluble and energetic game warden notwithstanding, I had to leave, and in spite of having announced our return-safari well in advance, the village on that day was absolutely deserted. Porters could only be rounded up in the early afternoon, and they reached the next resthouse on the trail in the night. In due course I was back at our base camp with a few Water-Chevrotains and Gaboon Duikers ; of Itundùs there was nothing. . . .

Next I turned my attention to the large forest reservation of Yangambi, on the right bank of the Congo River some 60 miles west of Stanleyville. At the Izangi government headquarters a sympathetic administrator gave me a paper calling on the black government man at Ueco to provide me with up to fifty men. I hurried to the place, only to wait in impotent frustration for many days as this rather turbulent tribe of Turúmbu natives was in the throes of a serious distubance brought about by the question of who was going to bury

the corpse of a woman whose husband had been slow in paying the customary death-indemnity to the brother of the deceased. There was plenty of leisure to find out that the Turúmbus, fierce and repulsive looking due to evenly spaced skin flaps produced by tattooing in a straight line from the edge of the scalp on the forehead to the tip of the nose, imitating the serrated centre ridge of a crocodile's back, call the Peacock " Ngokóla ". On this trip and later I was assisted by my Arab, Mwarábu, whom I had promoted from carpenter to collector. We finally did get fifty men ; instead of coming to us with nets and food they appeared empty-handed in their Sunday best and had to be sent back to bring the necessary implements. It would be too long and tedious relating in detail what happened with this great force of helpers, but two events stand out. One attempt to collect Peacocks in the territory between the rarely used road running from Ueko or Weko to Bengamisa and the Congo river brought two Water-Chevrotains instead, and the natives who carried them out to the road in proper cages, in spite of being cautioned, bolted with the load and had great fun in being the first ones back. One of the animals was dead as a consequence. . . .

The next attempt, north of the road mentioned previously, I can still vividly remember. On the third stay after having established camp and distributed strings for traps, I heard a tremendous commotion in the depths of the forest ; it swelled in volume and drew nearer. I could make out one man carrying something in a bag and over thirty wildly gesticulating and rhythmically chanting natives. They drew to a halt like a well-drilled platoon with a tremendous thumping of feet, and I was handed the bag, blood-stained, with a flourish amidst sudden profound silence. I extricated from that bag two Black Guinea-fowl, the bottom one practically dead. It died later, and its fate would have been different if one bag for each bird had been used, of which they had several provided by me. The terrific racket had scared all game for miles, and I had to give up the attempt, a little wiser, doubting that great numbers would accomplish anything, especially when, on calling in the string handed out for traps, I found half of it unused. As to their hunting prowess with nets to provide them with the so highly valued meat, a little figuring made it apparent that if the men are being paid at the more than modest 11 to 12 American cents per day, a ten or twelve man party with nets, which is about the largest number able to work together, and at their best if from the same family and village, bring in so little it is decidedly much less expensive buying meat in cans coming all the way from the Argentine. . . .

Next, I turned my attention to the hunting camp of the former village of Boma-Hay which used to be on the left bank of the Aruwimi river below the government post of Banalia. A Mr. Coultas and a

companion, both Canadians, had collected there five or six Peacocks years before. The village had been relocated much further up-river on the opposite bank, but with the help of the old chief, Lúpu, a former guide of Stanley's, as well as white administration officials at Banalia, I set out with a dozen men in dug-outs for the former hunting camp of Boma-Hay, or so I thought. I even had among our party the village chief of Boma-Hay, who described how the two Canadian " Muzúngus " received news about the outbreak of World War II on their squeaking box precipitately abandoning everything such as tents and so forth, implying he hoped I would do likewise.

The hunting camp we reached after floating with the current for about five hours, entailing further a march of several hours across swampy forest, practically on the heels of elephants, to judge by the fresh signs, was the most picturesque ever seen by me. Many tiny huts were balanced on 30 ft. long stilts in a tiny clearing. Into these the men retired at night for safety, presumably, but I hate to think what would have happened if an elephant had leaned against the poles to scratch its hide. . . . A smoking rack laden with charred lumps of meat and day-old domestic chicken underfoot were proof it was being used. Towards sundown several hunters started making a rhythmic racket with little gourds and reeds resembling the squeaking of supernatural-sized bullfrogs, and after hours of this the tempo increased and the most stalwart of the hunters started to sway, teeter, and stagger backwards. The direction in which the magic powers drew him more often was the necessary indication which way next day's hunt would go. After a few days' wait, during which I inspected alone several of their widely scattered trap-lines to check the strength of the tension-poles used in their traps, at considerable risk of getting lost, many Black and Crested Guinea-fowl were brought to me, and this was topped off by a headless female Peacock and a Genet caught in adjoining traps. Then nothing more appeared, and one morning, outside camp, at the usual hour of starting operations at about 8 o'clock, my village chief of Boma-Hay officiated in a long-drawn out mystical ceremony in which two little smoky fires and a half gourd with water were placed on the trail. He gestured mostly silently, mumbled a short incantation, after which each participant had to step over the fires. From then on plenty of Water-Chevrotains and small Duikers, mostly dead, came into camp but, for me, nothing more. I kept insisting they should move into the next ex-hunting camp situated much further in as agreed upon at the start. However, the men showed a strange reluctance to do so, and I gave orders to return. In a village on the opposite bank of the Aruwimi river I had to wait some days for travel arrangements to get back to Banalia. In the meantime, many villagers got suddenly affluent by collecting substantial rewards for Black Guinea-fowl which they netted for me.

Plenty of talking also made it startlingly clear that our Boma-Hay village chief, who was on such good terms with the power controlling the movements of game, had not taken me to the former camp of Boma-Hay at all but much nearer instead. The men got duly punished by their chief, Lupu, but by a strange quirk of native Congo justice, the village chief mainly responsible, on account of being a blood relation of Lupu's, was spared the punishment.

On reaching the new Boma-Hay, from which we had started out originally, and where I had left my Arab collector, Mwarábu, I found a dozen Black Guinea-fowl on hand as well as a "Bulikoko" or Giant Plantain-eater. The first were doing fine, the same as my Tufted Guinea-fowl, by being fed at the start on the white immature flying termites coming out of the mushroom-shaped termite nests abounding in the forest. Some really hardy woman also brought for our Sesés, or Black Guinea-fowl, as called locally, pails full of the big termites constructing huge mounds often graced with spires. These imposing structures are so hard that every strike on them with a machete brings forth sparks. The numerous chambers contain vegetable matter on which tiny round mushrooms are raised. Disturbing their work is savagely punished by the square-headed soldiers, and every nip inflicted by their formidable jaws draws blood. On approaching a band of these termites foraging on the forest floor the myriads suddenly start rapping rhythmically the dead leaves and twigs, and the effect produced is startingly like the sudden drumming of an oncoming tropical shower.

After being transferred to an aviary at our main camp, the Black Guinea-fowl learned to feed on an insectivorous mixture but they would always show the greatest enthusiasm on being given termites. They would rush to the termite covered spot trying to cover with their bodies as much ground as possible, shoving the companions away pushing with their shoulders sideways. Most unusual and un-Guinea-fowl-like. I suppose these rather small gallinaceous birds, absolutely black, with bald scarlet heads parted in the middle by a few black feathers, with a series of spurs on each foot, must have originated in the forest, which would account for their being wholly insectivorous, never touching grains while in captivity. The Tufted Guinea-fowl, on the other hand, probably existed in the sayannas first and then invaded the forest. In the forest no grains are found, of course, only fruit and insects. On breaking them in, after starting them on termites first, they would soon take to grains. The Congo Peacocks, also inhabiting the deep forest exclusively, gave evidence at first that they live mainly on insects by taking immediately to termites, as well as grasshoppers ; they do, however, subsist also on many wild fruits, because whenever I had occasion to inspect trap lines later set up by natives they would be found in the vicinity of forest fruit trees

having fallen to the ground. Some of these were black, flat cherries, others mango-like. In a compound in Coquilhatville Province I was even shown a round fruit growing out of the bark of a seemingly fast-growing tree of hand-ball size, covered with a rough skin, bringing to mind the capping of bee combs, containing innumerable black flat seeds each in an envelope of sticky white meat. At these one freshly-captured Peacock once pecked but, on the whole, in the first misery of their captivity, they would take to insects only. The spotty distribution of these fruit trees accounts most likely for the equally erratic occurrence of the Peacocks. This species, in due time, here at the Bronx Park after two years of captivity, is showing a marked liking for grains.

The barbarously gaudy-coloured Giant Plantain-eater, an enormous fruit-eating Coucou, so to speak, on the bringing back of which we had counted, proved to be our greatest disappointment. We were unable to hold a single specimen. Their dissection showed them to have a very short, almost straight gut. This would indicate they are gluttonous and continuous feeders, showing a well-known preference for the sweet fruit of the Parasol tree. It is possible that between capture and our getting the specimens, to be promptly force-fed, too much time elapsed, thereby irretrievably damaging their digestive system. This species has been kept once at London's Regent Park and Villers-Bretonneux, in 1916–17. As a curious fact I must mention that they show a pronounced liking for freshwater algae which grow profusely in unshaded ponds and swamps. The natives, in order to get them, erect in the centre of such locations little gallow-like structures. By perching on these the birds are snared by the legs.

The bird-collecting activities at Boma-Hay were extended to a search for rare mammals, and suddenly I realized with considerable misgivings that our departure was slated for a few months hence and still we had no Peacocks, the specimens received at the beginning of our stay having died. I remembered Ikela, the spot where the Peacock had practically been raised. The road leading to it proved bad and worse, but passable, and on entering Equator—or Coquilhatville Province—the well-kept highways there were a welcome change. With the exception of an obscure native government clerk, nobody seemed to know of Mr. Herrling's former success with *Afropavo* there, but driving slowly along the road to Lomela and spreading the word for the reason of my coming, after staying for a few days near Yolombo, a native appeared with a round reed-basket terminating in a point fastened to a carrying pole. In that basket was a female Peacock, and from under her peeked five newly-hatched chicks. A day later the female died, in spite of feeding a little on termites provided. I think insolation was the cause of the death of this "Lítono", its local name. The hunter had the sense of shading the basket with

leaves, but heaven knows how far he walked in the glaring sun of the highway. Trying to elucidate how and where he had made his catch proved impossible. The trade language, called Lingalá, spoken there, neither of us knew well enough, but the huge cash reward was enough for him. The actual payment of such a sum was spread by throbbing tom-toms, and I was soon the sad recipient of many " Litonos ", all males from then on, with limbs whole but unable to come out of a deadly weakness, force-feeding notwithstanding. Either the specimens were carried too long in the blazing sun or left in the traps until fatally exhausted. As all these trapping activities were undertaken at the initiative of the natives without government supervision, such results were logical. I must add that there I had the rare opportunity of seeing a male Peacock in its natural habitat in flight. On examining some trap lines, perhaps two miles off the highway, a commotion ahead and a blue shape took to the air and a freshly-torn foot sling held up by a crestfallen native boy was the reason I managed to get so close. It was obvious that *Afropavo* in that region was more numerous than anywhere else I had been up to then, and why the captured ones never showed any broken limbs became clear when looking at their most ingenious traps which are suspended slings fixed at a height that obliges the bird to stoop a little when ducking under. Getting its head and body through the noose, the feet upon advancing pull it down and it closes slowly on one or two feet upon further progress. I had never seen anything that simple and humane anywhere, doing away with tension poles and traps not functioning due to rain. At this spot I also wanted to know where *Afropavo* nests. I engaged two hunters who professed to know, and we searched carefully hundreds of small windfalls, so fresh the crashed but dry limbs had still every tiny twig on. In these the bird is supposed to nest, as the crackling of the dry twigs would immediately signal a warning to the sitting hen. Perhaps the natives were only pulling my leg, because in the regions I knew to the north-east, such windfalls I had never met with. Besides, the hunters there profess not to know at all. However, an old chief in the Yangambi Forest Preserve emphatically stated they nested high in the trees, which would mean in the manner of a Curassow of the Americas. A Bamboli hunter at Opala, in the presence of a government official, positively asserted they build their nest some 10 feet off the ground on broken-off tree trunks. As to the number of eggs, from three to six are probable.

Of the five downy Peacock chicks, I managed to keep three alive for several weeks. Out of the skin of their dead mother and a corrugated cardboard box, I made a shelter with a sloping cover and placed it in their cage. They learned to take refuge and warmth there in no time. However, two of them on the way back came to grief by getting squeezed too hard under the lowest part due to the bouncing of the

truck. I could not properly drive the truck and look out for them at the same time, and this came about because at Ikela, on crossing the Chuapa River ferry outward bound, the crew thought it unnecessary to lash the ferry to the river's bank. On getting on to the steep movable ramp leading to it my heavy vehicle pushed the ferry off the bank and the truck fell in, the front coming to rest on the river's bottom while the rear was precariously balanced on the edge of the concrete ramp. It stood practically on its nose. With the help of all the Ikela jail inmates it got pulled out and received an emergency clean out. Later the headlights conked out ; the motor, due to sand having entered it, became an oil-eater. I had to nurse the vehicle back to Stanleyville, driving all night with a pressure gasoline-lantern attached to the front bumper serving as a headlight substitute.

Some Bamboli-tribe native, whom I had for a while as helper, often extolled the merits of Elipa, some 60 miles south of Opala, on the Lomami River watershed, as wonderful Itúndu territory. Finally, I had to get rid of the obsession by travelling to the place. All I got for my trouble was a useless wait of over a week and the negative result proved in keeping with the diminutive village huts with fences in the front but nothing in the rear to keep out the goats, each man also coming to the usual morning roll-call provided with a 3 in. high piece of wood to squat on while the orders to collect Itúndus were being discussed and commented upon at length. In keeping with the place were the anklets many women and some men were wearing. These took the form of hammered copper balls the size of a child's head, and even larger, considerably hampering the wearer's movements, but considered very " chic ". Realizing these tribal characteristics, I dropped the idea of going back to Yaolonga where I had met with signs of Peacocks on our first try.

After having delivered the Peacock chick into the hands of my wife, together with three adult males, I hurried back bound for points beyond Ikela. This time, instead of being alone, I had with me my collecting aide, Mwarábu, and an " interpreter " who had helped feeding our stock at the base camp. Mwarábu was set up in the vicinity of Bokúngu, some 75 air-miles east of Ikela, with the mission of getting more Peacocks, and the ex-government clerk-interpreter, very efficient in the Lingála language, stationed near Yolombo and provided with sufficient funds to pay for any Peacocks that might turn up. Passing through Ikela I was astonished to hear I had already set up a man with the very same instructions at Yolombo. The official stationed there pointed out to me a smart-looking man of the Cúcu tribe whom I had given a lift on the truck previously. He had, indeed, ordered the natives to bring him antelopes and sundry " nyamas " on his own initiative. He lived exceedingly well on the coveted meat but failed to pay, and his

providers got wise. There he was on the prisoner gang doing odd jobs, but the official could not help pointing out with admiration how fast and willingly he performed every task assigned, and concluded with conviction that after serving his term he would not fail to snap up this prize and keep him as his personal aide.

From Yolombo I walked some 14 miles to the Cúcu village of Yofofé and found there a native playing with an already weak downy Peacock chick. It was too far gone to rear it, and after several days of useless waiting I retraced my steps. I then motored along the highway in the direction of Lómela, situated in Costermansville Province, and to a mission at Loto, where a Pigmy, as previously stated, brought me a dying immature Peacock female, called in the Okêla language Omôno, whereas the male, curiously enough, goes by the name of Lófokele. On the way down I tirelessly inquired about the " Ditondo ", the name by which the bird was now generally well known, but somehow I could persuade nobody to make efforts with a view to capture any. However, I got the conviction it was much more abundant there than in all the territory previously visited.

On my return to Yolombo I found several males in cages being attended to in a fashion by the ex-government clerk, but the people were in an uproar, clamouring to be paid. It seemed my representative had started functioning by having his picture taken by an itinerant pioneering black photographer and then had dazzled the local belles with the wealth at his command. There wasn't a trace of it, and he explained the loss with the most fantastic story of assault and robbery. We practically turned him upside down and recuperated, salted away, 25 cents. . . .

On fetching Mwarábu at his collecting station near Bokúngu, I was agreeably surprised to find a female Peacock with one downy chick on hand. He explained that he himself led a party of natives into the distant forest and did come across a female with many, perhaps five chicks, which scuttled into hiding while the mother flew into a tree. He made a man climb the tree, whereat the female flew down, started to run erratically, and hid, head first, under some tree roots, where he threw a bag over her. He put the whole gang of followers to search for the chicks but only a single one could be found. On a previous search in the forest they also had come upon a single female which took refuge in a tree, and got chased down the same way, also taking refuge, head first, under some obstruction. The pursuing native grabbed her rear end with both hands and practically plucked her naked. She did not survive such rough treatment, neither did the female with the chick stand the very rough trip back to our base camp. We arrived no sooner there when a telegram reached us that the government official at Yolombo had another female on hand. I did an about turn and found the specimen in very good shape

indeed, thanks to precise instructions previously given. This female, the only one of its sex, and six males finally reached the New York Zoological Park, but upon her death proved to be old, with atrophied ovary, presenting many male characteristics.

I will conclude by mentioning another slight disagreement that exists between Dr. James Chapin and myself regarding a possible breeding season proper to *Afropavo*. Dr. Chapin maintains that owing to the uniformity of the climate throughout its range it breeds the year round, whereas I am inclined to think the season for one particular section lasts from the middle of January to the end of May, during which period I collected chicks at localities in Equator-Province, previously mentioned, not so very far apart when considering air-distances. I will also give the opinion of a seemingly qualified native interrogated at the Kirundu Adventist mission. According to him, the breeding season starts when a large red hairless caterpillar makes its appearance there in September to October. The male is supposed to feed the female with these, thereby starting her on the way towards maternity. These caterpillars are a very welcome food item for the natives as well and, in the Equator-Province, a friendly government official related to me that myriads of these caterpillars present the most impressive spectacle when the voraciously feeding hordes high in the trees suddenly rear up and vibrate the upper parts of their bodies on being addressed by the natives in a highpitched thin whistling sound.

Our collecting assignment came to an end when we boarded a chartered plane at Stanleyville on 13th June, 1949, reaching New York two days later without misshap.

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MODERN METHODS OF TRANSPORT AND AN INTERESTING HYBRID

By Edward Boosey (Keston, Kent, England).

In August we received at Keston a consignment of Australian Finches, consisting of Sydney Waxbills, Zebra Finches, Painted Finches, and Diamond Sparrows, and a single hybrid which is obviously a Diamond Sparrow × Long-tailed Grassfinch cross.

In our last consignment of Australian birds there was a Zebra Finch × Long-tailed Grassfinch and a Masked × Long-tailed Grassfinch, but whereas both these are fairly common crosses, I have never seen a Diamond Sparrow × Long-tailed Grassfinch hybrid before, so I thought a description of the bird might be of interest.

As in a Diamond Sparrow, the head is grey, the back and wings a

mousey brown colour, and the tail black, but the latter is pointed instead of square, and the rump, instead of being red is white mottled with salmon-pink. The cheeks are white and the breast pale pearly-grey, merging into white on the under tail-coverts. There is a large black patch on the flanks mottled with very dark grey and with a faint black and white striped effect at its outer edges. The bird has the dark maroon-red beak of a Diamond Sparrow, and a rather smaller edition of a Long-tailed Grassfinch's pear-shaped black bib on its throat. Altogether it is rather a handsome hybrid—much more so than the insignificant Zebra Finch × Long-tailed Grassfinch cross.

Incidentally, although (living so close to a jet fighter aerodrome as we do) I have cursed the invention of aeroplanes often enough, I must say air travel certainly has proved a boon and a blessing for the importation of birds that have to come long distances. For example, the Australian consignment just received was dispatched from South Australia on the Monday, and reached us on the Saturday—just five days compared with the long six-week journey by boat.

This swift modern transport is, of course, particularly valuable for such bad travellers as Diamond Sparrows, which nearly always used to arrive having plucked each other bare, whereas those we nowadays get by air arrive in absolutely perfect feather.

Mortality, too, is reduced to a minimum, and in this last consignment, which consisted of 130 birds, only one—a cock Painted Finch—died on the journey.

It is interesting how comparatively common those once great rarities, Painted Finches, have become since the war, and the above consignment contained no less than twenty specimens, whereas before the war we used to think ourselves lucky if a very occasional pair arrived. They proved very little trouble to breed, so I suppose someone has bestirred himself in Australia, and is breeding them in really large quantities.

Ruficaudas, too, seem much commoner now than they used to be, and nowadays we can get fifty or more at a time, instead of the occasional half-dozen pairs or so which used to arrive before the war.

* * *

BREEDING OF THE ROSE-CRESTED COCKATOO

(*Kakatoe moluccensis*)

By KENTON C. LINT, Curator of Birds, Zoological Gardens of San Digeo, California, U.S.A.

Rose-crested Cockatoo (Ger. molukken-Kakadu, rothhubiger Kakadu, Rothhauben-Kakadu; Fr., Cacatoés à huppe rouge; Dut., Rooduif Kakketoe).

This handsome Cockatoo, which Edwards described in 1751 and pictorially delineated, and which Gmelin named scientifically in 1778, has, like many other birds, been much confused or mistaken by several of the older authors.

The first successful breeding in captivity of this species in the United States, and possibly the world, was achieved this year in the Zoological Gardens in San Diego, when a baby was hatched on 8th June, 1951.

The forehead, head, and sides of the neck are pure white, the front crest feathers white, the next vermilion on the outer web, and white at the point and inner web; the rest have the outer web dark, and the inner web light vermilion. All the upper and under parts of the body are white, with a rosy shimmer and a yellowish tone over them in the bright light; the quills are light yellow on the reverse side, the tail feathers on that side are orange-yellow; the lower part of the body is rose coloured. The beak is black, the cere a dark bluish-grey; the eyes are black or dark-brown, the eye cere a bluish-white. The feet are blackish-grey, with scales and claws black. The female is not differentiated generally, and the sexes are very difficult to determine. Their habitat is Ceram and Amboyna.

Comparable in size with the Great Sulphur-crested Cockatoo, the Rose-crested appears larger than it really is because of the thick plumage, which is often ruffled. (Length 15½ inches to 17½ inches; wings, 12 to 13½ inches; tail, 6½ to 7 inches.) It has the peculiarity of being able to ruffle not only the crest, but also the long chin feathers when excited.

Very little has been written, even by the older authors, concerning the wild life of this particular species. Dr. Russ says that these birds were taken in numbers from the nest and hand raised. Most of the birds of this species are already very tame when they come into the market, being hand-raised by the natives. In the many years we have exhibited this species of Cockatoo we have found them to be wonderful show birds, clever, and readily taught to talk and whistle tunes with a soft flute-like voice. In recent years the Rose-crested Cockatoo has not been imported frequently into the United States.

Since the baby hatched this year represents fifteen years of continued effort to induce the species to breed, we consider it quite an

achievement. Two eggs were laid by the hen Cockatoo, but one proved to be infertile. The incubation period was thirty days.

Of the many species of birds, especially of the psittacine family, I consider the Rose-crested Cockatoo to be the most difficult baby I have raised in the Zoological Gardens. This was due to its unusual temperament and to its specialized diet requirements.

In captivity we have found the most suitable food for the Rose-crested Cockatoo to consist of Indian corn (on the cob), sunflower seed, oat groats, peanuts, pinon nuts, orange, bananas, lettuce, and dried bread. Our pair of breeding Cockatoos are fed this diet throughout the year, divided into two feedings each day. During the breeding season only cuttlefish bone is added, to supply the calcium needed in the producing of eggs.

Even with such a variety of foods we have found through past experience that most Cockatoo parents feed their babies well for about ten days and then suddenly stop feeding, and the babies either die or develop a bad case of rickets. Hence we usually remove the babies from the nest at nine to ten days of age and feed them by hand.

On 18th June we removed the baby from the parents' nest, and found it to be in the need of food, as its crop was completely empty. Ten days old at this time, the eyes were barely open. Food was offered immediately, and a small amount was assimilated. A feeding schedule at four-hour intervals was then followed. This schedule was followed for eight weeks, when we discontinued the feeding at night. When fifty-six days old this baby tasted his first piece of fruit, a quarter of an orange. Banana, apple, pear, and orange were all offered to him, which had earlier been rejected. When grated up on the regular formula this was immediately regurgitated, and a second feeding was necessary. As I have said before, because of this species' nervous digestion, it is most difficult to raise. Closing a door, opening a window, moving a chair, any unusual noise would cause this Cockatoo to regurgitate his food at the most inopportune time. To-day, at three months of age, this Cockatoo is still a baby, and although able to eat by itself it is still being spoon fed three times each day as a supplement to its regular diet of sunflower seed, orange, banana, apple, bread and lettuce, and peanuts.

In hand feeding all members of the psittacine family we feed in the following manner. We first bring the water or milk to the boiling point, then add the following ingredients in the order named, stirring gently all the while : half-cup of sperry wheat heart cereal, 5 drops Oleum Percomorphum, 2 fresh egg yolks, 1 teaspoonful of ground cuttlefish bone meal. This formula will cook in three minutes. Cool until finger warm and feed to babies with a spoon.

* * *

ROSE-CRESTED COCKATOO (*Kakatoe moluccensis*).
Age 45 days, 23rd June, 1951.

[*To face p. 224.*

Copyright] [*N. Chaffer*

Turquoise Grass Parrakeet.

BREEDING NOTES ON TURQUOISINE GRASS PARRAKEET

By DAVID M. WEST (Montebello, California, U.S.A.)

Of the seven Neophema or Grass Parrakeets of Australia, only four species are now to be found in American aviaries. Of these four only the Elegant can really be regarded as commonly available, and the Bourke's, Scarlet-chested, and Turquoisine are all rare.

The Turquoisine is one of the most beautiful of the Neophemas—and next to the Scarlet-chested one of my favourites. This species is the rarest of the four mentioned species in America.

In the United States the first breeding was by F. H. Rudkin, senr., in 1933, when he reared four young. Others subsequently bred it—including the late I. D. Putman. Unfortunately the Turquoisine is more difficult to mate-up than any other of the Neophemas we have kept—so that when we finally secured a pair of Turquoisines in 1947 there were considerably less than a dozen specimens left in the United States.

Before recording my breeding notes on this species, a short description may be of value to the many who have not seen a living example. In size they resemble a Bourke's, but differ vastly in their colouring. The back of the male bird is a very lovely green ; the face and cheeks turquoise ; the wings turquoise blue with a red patch on the wings ; the tail is green with each feather tipped with yellow, and the yellow increasing in extent towards the outermost feathers on each side, which is almost entirely yellow ; and the breast and under parts a very rich yellow-orange. The female is rather similar in colouring to the male, save she is much paler, lacking the red wing patches and the bright blue face and the brilliant yellow-orange breast. I might add here that while all the standard works show the female as not having red shoulder patches, almost all of our females have a small but definite red patch. However, it is smaller than the male's red patch but no less bright.

When we finally obtained a pair of these birds in late 1947 naturally we were very anxious to breed them. The pair was placed in an aviary twelve feet long and three feet wide and six feet tall, and this aviary was portable and was moved about on the lawns as weather indicated. In the warm summer months the aviary was under a sycamore tree, thus giving partial and filtered sun, and in the winter the cage was placed so that it received full sun. The greatest advantage of this aviary was that it gave the birds a large supply of the fresh grass they so greatly enjoyed. In the warm weather their delight was to run about on the lawn in their aviary following a sprinkling of the lawn. Incidentally, they are great bathers—and

rarely do they miss having a dip when the lawn sprinklers are on near their aviary.

Although in the wild state only one clutch of young are generally reared in captivity they are invariably double-brooded, and a third nest is not uncommon.

In March of 1948 a nest box was given to them. In size it was like those commonly used for Lovebirds (*Agapornis*), and was filled nearly to the entrance hole with coarse sawdust or more accurately wood shavings. It was amusing to see their excitement at this box, for when they saw it coming the male began to call and fly wildly about, spreading his tail while in flight, and thus showing the very lovely yellow webbing on the tail. After the box was hung (under the shelter) the male would fly to it and very cautiously look it over—while the hen sat with rapt attention near by. She would occasionally hover about it, but a good twenty minutes passed before she finally flew on to the nest.

The following days their interest grew and the male assiduously fed his hen—and she spent hours inside the box throwing out the superfluous wood shavings. Eventually they were seen to mate, and then she began to lay her clutch. This time the clutch was four eggs, and she began incubation with the third egg. All during the eighteen-day incubation period the male sat several hours daily at the entrance hole, and would frequently call to the hen. On several occasions he would spend a large part of the day in the box with the hen. The hen left the nest twice daily—once in the morning and again in the evening. She generally left the nest at the call of the male, who would fly up to the hole and call to her. She would remain away from the nest only a few minutes each time, just long enough to eat, drink, and fly about the cage a few times. Here it was interesting to note that her first activity was invariably to drink, after which she would eat and then fly for a few minutes.

The evening of the eighteenth day was a happy birthday for the Turks and also their owners. Now half the struggle was over, if only all would continue well. Both parents fed the young, the male feeding the hen and also the young. When the young were about four days old the male began to feed them directly, and sometimes he would feed them while the hen was out eating.

Their diet remained the same all during this period. They received a seed mixture of one part yellow millet, one part oat groats, one part sunflower, and two parts canary seed. To this was added one-quarter orange and one-quarter apple daily, and also wheat bread in the morning and again in the evening. They had a constant supply of greens, since their cage was on the lawn, but added to this was chickweed and the berries of ripe (red) Pyracanthas (Fire Thorns), a member of the Cotoneaster family.

After the fourteenth day the female no longer remained in the nest overnight. By the twenty-first day the young were being fed at the entrance hole, sticking their heads out and calling to the parents to be fed. They are quite noisy while being fed, and make sufficient noise that one might hear them at a distance of 60–75 feet away.

Finally, on the twenty-ninth, two young were found out and sitting quietly on a perch in the sun. Even at this very early date the sexes were clearly visible, the young male having a red shoulder patch and being brighter than his sister. On the thirtieth two more left the nest, and again these two were a pair and the sexes clearly visible. Although we had never looked into the nest, we felt there were no more young in the box, due to the lack of parental interest in the box on the following days. This supposition was proven to be correct, for we later cleaned out the nest box, and this hen had successfully hatched and reared the four eggs she had laid.

The parents continued feeding all the young for about ten days after leaving the box. Shortly thereafter the male began to attack the two young males, and they were removed to another aviary. The male continued to feed the two females (who were then on seed), and the female got busy with the second nest.

After the hen had been sitting for about ten days, the two female young were caught and placed in the same cage along with their brothers and some young Bourke's. Here it is of importance to note that even though we entered the aviary and caught up the two youngsters, the noise and confusion did not bother the nesting female enough to cause her to leave the nest box, or even come to the entrance hole.

This second nest was a close repetition of their earlier success ; producing three youngsters comprising a cock and two hens. Again the sex of the young was discernible the day they left the nest box. These youngsters left the nest on the 30th and 31st day.

Amazingly enough the hen returned to the nest for a third try, but this was not successful. Four young were hatched and reared for twenty-three days, but the hen deserted them at this time, and they all died. Contributing causes to this action were the heat of the summer weather and the hen being in a moult. This moult was begun shortly after the inception of the third nest. The four young were two cocks and two hens, the male's red wing patch just beginning to be visible at this time (twenty-three days).

Subsequent experience with this species has turned up some additional information on their handling. For one thing, Turquoisines are very aggressive birds, and we have found them a little difficult to mate up for this reason. They are more fussy about a suitable mate than any other Neophema we have had experience with. Further, individual pairs differ tremendously in behaviour ; while our old pair

never once fought, we have young pairs that do battle at the slightest provocation. They are not mean with other birds, but they would be quite impossible to keep on a colony breeding plan.

Each year following 1948 we have raised a few youngsters of this species. However our progress has been rather slow, for we have not allowed any young birds to nest until they are two years old. Even so we now have four breeding pairs and several extra males. In addition to this, three young breeding pairs have been sold to another fancier here in California.

This current year of 1951 has been a very poor breeding year with every local aviculturist singing the blues. We had great hopes for rearing a number of young Turks from our four breeding pairs, but . . . By late March each pair has four fertile eggs, so our hopes were really high. But for some strange reason not one of the sixteen fertile eggs hatched ! Why ? Later on they all went back to nest, and their luck was better, so that at this writing (June) I can report nests of young with two and three, and another nest of fertile eggs presently being incubated. The remaining pair had a second clutch of clear eggs following their earlier and fertile clutch. No thirds are encouraged, since the warm weather will soon be upon us, and many of the birds will begin their moult very soon.

We have found Turquoisines very tame, and they do not object to your checking their nests while the female is off. We usually check the nests twice, once after about fourteen days of incubation (we throw out any clear eggs at this time), and again after the young are about a week old. By knowing the number of young we can give extra food accordingly. Average clutch seems to be four, though we have had one nest of just two eggs and one youngster hatching.

I think that with care American aviculturists can again breed enough of these beautiful birds, so that you will see them in many collections instead of a few. This year there are a total of seven pairs in California that should reproduce—and there are a few unmated specimens about, so things are looking up for the future of the Turquoisine. In 1950 I secured new blood with a female Turquoisine from another breeder, so this will give me new stock. This year this particular bird is the mother of two youngsters due to fly in a few days. With average luck the next year should see quite an increase in the local population of this species—so it is rather nice to end this article on a note of hope rather than on one of dejection.

Correction.—The title of the plate facing page 225 should read " Turquoisine Grass Parrakeet ".

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PRINCESS OF WALES' PARRAKEET AT LIBERTY

By THE DUKE OF BEDFORD (Woburn, Beds, England)

Having on various occasions enjoyed watching the matchless speed and grace of Rock Peplar and Barraband's Parrakeets at liberty, I have often wanted to see the third member of the sub-genus—the Princess of Wales' Parrakeet—under similar conditions. Happening to have a young cock and not too well bred for stock purposes, I decided recently to take the risk and put him in an aviary containing four young Rock Peplars just trained as day-liberty birds, and an old cock Rock Peplar trained last year. The young Princess of Wales' father I put in an adjoining aviary as a call bird. The young bird found his way out fairly quickly, and behaved as a Rock Peplar or Barraband ought to behave if all goes well on the day of its release ; that is to say, he flew backwards and forwards high in the air, and circled round and round, but never went more than a quarter of a mile away in any direction. Like other young Polyteline Parrakeets on their first day out, his powerful wings were inclined to take charge of him, and he experienced some difficulty in stopping, and especially in flying *down*. As a result of this difficulty one rarely gets a Rock Peplar or Barraband back into the aviary until the day after its release, and experiences some anxiety lest it should be taken by an Owl when roosting out. Fortunately these pests are not quite so keen on killing big birds in late summer as they are later in the year.

The flight of the Princess of Wales proved swift and graceful, but had not quite the dash of that of his larger relatives. He was, however, more amenable, and I got him down on to the aviary roof and safely back through the funnel that prevents day-liberty birds from emerging after their last feed before nightfall.

Since then he has proved a very docile and stay-at-home bird, spending much time sitting on his parents' aviary, and never going any distance away. He is, indeed, inclined to be unenterprising almost to the point of being dull, but it may be that his race, by reason of its quiet and friendly disposition and fondness of its dinner, is the safest of the Polyteline Parrakeets to fly at liberty. Rock Peplars and Barrabands, alas, are *not* very dependable. Adult cocks whose mates are confined will not, once trained, desert them, but there usually comes a day when trained young birds do not return for their evening meal. With luck, however, they may come back the following day or the day after. You have, however, had your warning. If you continue to let them out they will go completely wild, and never return. Consequently you must either catch them up and dispose of them, or mate the cocks and not release them again until they are really attached to their hens, which must be kept in aviaries adjoining the liberty one.

Subsequently, as recorded in another article, the young Princess of Wales' showed a tendency to wander too far and had to be caught up.

* * *

1951 BREEDING RESULTS

By DAVID M. WEST (Montebello, California, U.S.A.)

Although the breeding season under consideration is not yet over, and there may still be a few surprises, this year has been a very poor one to date. The 1951 season was our poorest in several years, and bad luck was our companion almost all the way. Other fanciers in the Los Angeles area report the same thing—but aviculture is one instance where misery does not love company.

The two saddest events were the loss of four young Pileated Parrakeets—deserted by their parents—and the Manycolors which kept our hopes up by looking in their nest boxes but proceeding no farther with the task of rearing a family.

Other bad luck (before passing on to happier events) included Barnards and Stanleys which did not even lay this year, and Adelaide Rosellas which laid seven eggs but did not sit and at the time we had nothing to put the eggs under for foster parents. The Blue Rosellas hatched young—but they were deserted—a strange event, for we have raised from sixteen to eighteen young from our two pairs every year for a good many years. Red Rosellas, Elegants, and most of the Bourkes all had clear eggs—though the pairs have all raised on previous occasions.

Better news department includes three young Princess Alexandras plus another nest of five fertile eggs still being incubated at this writing. There are now three young Blue Rosellas, two young Bourkes, sixteen young Scarlet-chested, and five young Turquoisines.

All in all, results were extremely disappointing. Again this year, even though I was away and in the Service, all the birds received (in addition to their staple diet of grains) ¼ orange and ¼ apple daily, plus greens every day. All the nest boxes were removed in the fall and cleaned and scrubbed in January, and filled with new nesting material. Considering the better results, both in varieties and numbers, of other years, this year can easily be said to be our worst since 1943.

No particular clue as to just what went wrong can be discerned. Rainfall again was much below normal this year in our area, and I feel (as many others do) that the lack of rain has been at least a contributing cause. At any rate, again I find myself saying (as I have every year since my first pair of Pigeons), " Next year . . ."

BRITISH AVICULTURISTS' CLUB

The thirtieth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Wednesday, 14th November, 1951, following a dinner at 7 p.m.

Chairman : Mr. D. Seth-Smith.

Members of the Club : Major J. E. Adlard, Mrs. J. E. Adlard, Miss P. Barclay-Smith, H.G. the Duke of Bedford, Miss K. Bonner, Mrs. V. M. Bourne, T. Crewes, A. H. D'Aeth, B. H. Dulanty, O. E. Dunmore, A. Ezra (Patron), Miss S. A. Fothergill, J. C. Garratt, Miss D. Gask, T. Goodwin, F. Grant, R. E. Heath, G. T. Iles, Miss M. H. Knobel-Harman, H. Murray, S. Murray, K. A. Norris, S. Porter, A. A. Prestwich (Hon. Secretary), J. H. Reay, D. M. Reid-Henry, D. H. S. Risdon, R. C. J. Sawyer, E. O. Squire, E. H. Tong, E. N. T. Vane, C. S. Webb, H. Wilmot, R. C. Witting, H. Wallace Wood, J. Yealland.

Guests : J. Bailey, P. Bates, P. Braun, Mrs. P. Braun, C. Campbell, G. S. Cansdale, Miss I. Dix, Mrs. J. C. Garratt, Mrs. E. Gask, Miss H. M. Gentry, Mrs. F. Grant, R. Hope, Miss P. A. Lawford, H. M. Luther, Mrs. R. Maurice, F. Mosford, Mrs. S. Murray, E. G. Pitman, Mrs. J. H. Reay, Mrs. D. Seth-Smith, Mrs. E. O. Squire, Mrs. E. H. Tong, Mrs. E. N. T. Vane, Mrs. C. S. Webb, Miss M. White, Mrs. H. Wilmot, T. Wilson, Mrs. R. C. Witting.

Members of the Club, 37 ; guests, 28 ; total, 65.

The Chairman, welcoming the guests, said he would like to extend a special welcome to Mr. Thomas Wilson, Vice-President of the Ornamental Pheasant Society of Australia, and of New Zealand.

Frank Grant then spoke on Waterfowl in Captivity. He pointed out the many charms and pleasures to be derived from keeping waterfowl and appealed to aviculturists to give more attention to this form of aviculture. His talk was a happy blend of rules and precepts, personal experiences, and anecdotes.

Some of the slides of birds in the speaker's extensive collection were apparently not suitable for the projector, and lost considerably thereby, but a series loaned by the Chairman were of his usual high standard.

The Chairman, thanking Frank Grant for his very interesting lecture, said no aviculturist, whatever his interests, could have failed to benefit by at least some of the observations.

The volume of applause indicated that this was most certainly the case.

The next meeting of the Club is on **9th January, 1952.**

ARTHUR A. PRESTWICH,
Hon. Secretary.

OFFICERS FOR 1952

A Council Meeting was held on 14th November, 1951, in the Council Room, Zoological Society of London.

There were the following appointments and retirements :—

Council.—Mr. K. A. Norris, Mr. A. H. Scott, and Captain C. Scott-Hopkins retired by seniority ; Miss K. Bonner, Mr. G. S. Mottershead, and Mr. J. Yealland were elected to fill the vacancies.

Elected Vice-President.—Mr. E. J. Boosey.

Elected Honorary Members.—Mr. F. H. Rudkin, Mr. C. S. Webb.

ARTHUR A. PRESTWICH,
Hon. Secretary,

* * *

NEWS AND VIEWS

In 1942 our President was awarded the Silver Medal of the Zoological Society of London for " Donations over a long period of years and long service on Council and as a Vice-President ". Now he has received the Society's highest honour, the Gold Medal. The importance of the award may be gauged by the fact that this is only the fifth medal bestowed since the foundation of the Society in 1826.

The present award is in recognition of Mr. Ezra's thirty-six years' service on the Council, most of that time as a Vice-President, and for his outstanding donations. The latter include six elephants, four tigers, and the two Kodiak bears at Whipsnade.

All members of the Avicultural Society will wish to join in hearty congratulations to Mr. Ezra on this almost unique distinction.

* * *

The thanks of the Society are due to the Directors of the Dudley Zoological Society, Ltd., to the General Manager, D. H. S. Risdon, to Head Keeper H. L. Hatch, and to the many others who contributed to making our Society's visit on 8th September a success.

Some thirty members and guests were welcomed by Director F. G. Cozens and D. H. S. Risdon, and after a very excellent lunch were conducted round the Zoo. As many of the visitors had come considerable distances their time was necessarily limited but all, especially those making their first visit, were very impressed by all they saw.

* * *

Mrs. L. Younger left England on 3rd September, flying to Australia via New York, Canada, Honolulu, and Fiji. She expects to be home by Christmas.

Further to the note on I. Baty's success in breeding Twite × Siskin hybrids.

W. Garrow has reared a nest of four this year. In 1938 he bred three hybrids with the parentage reversed.

* * *

Allen Silver has little time to devote to practical aviculture but he usually manages to breed a few good birds. This last season he has bred three Mealy Rosellas, four Golden-mantled Rosellas, five Bourkes, five Cockatiels, and four Mealy Rosella × Stanley Parrakeets.

* * *

The prospect of establishing the Masked Lovebird, blue variety, has slightly improved. This year three young ones have been bred at the London Zoo, and A. D. Campey has bred two blues from a pair of blue-bred. In addition, Campey has recently imported two pairs of blues. We may thus confidently expect an increase next year.

* * *

The Bronson Tropical Bird Aviaries, of New York, are showing considerable enterprise in the sale of pet birds. Using the slogan : "A bird to brighten every home," they are specializing in Hill Mynahs—four races are at present being offered. Birds are dispatched, complete with cage, food, and directions for keeping, by express locally and air express to distant points.

* * *

C. L. S. (Nantucket, Mass.) writes : "I am quite frankly amazed that you have kept the Magazine at its high level under so many adverse circumstances : rising prices for materials and labour, etc. It's a joy to receive it, and although I am not now actively engaged in aviculture, my interest remains as keen as ever."

E. T. (Bassett, Virginia) says : "This book you put out is really terrific ! I can see I have missed a lot of authorative reading by not having joined sooner." The Editor takes two bows.

* * *

Members are reminded that the annual subscription becomes due on 1st January.

In view of the present very high cost of publishing the AVICULTURAL MAGAZINE, Rule 5 will be rigorously enforced. *The Magazine will only be sent to Members who have paid their subscription.* A. A. P.

NEWS FROM AMERICA

The best game birds breeding results in the United States during 1951 have been obtained by Mr. R. H. Gibson, St. Helena, California. During the past season he has reared 2 Malay Argus, 2 White Eared-Pheasants, 4 Imperial Pheasants, and 30 Sonnerat's Junglefowl, as well as a number of less rare birds. Excellent results have also been obtained by Mr. J. W. Steinbeck, at Concord, California (12 Temminck's Tragopans, 7 Satyr Tragopans (from birds lent by Mr. Gibson), 13 Monals, 10 Germain's Peacock-Pheasants, etc.), by Mr. Lehmann, Myerstown, Pa. (4 Monals, 4 three-quarter White × Blue Eared-Pheasants, etc.), and by Mr. W. J. Mackensen, Yardley, Pennsylvania (12 Imperials, etc.). Also 12 Occelated Turkeys have been reared at San Diego Zoo, and a few Java and Sonneret's Junglefowl by Messrs. Parsonson and Rich in the Los Angeles district. Two Satyr Tragopans and a number of Pheasants have also been bred at the Philadelphia Zoo. Several pairs of Scintillating Copper Pheasants have arrived from Japan and come into the possession of Messrs. Mabey, Salt Lake City, Utah, and Gibson.

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Last summer Mrs. Milton Erlanger raised at Eberon, New Jersey, a hybrid between a Red-eared Bulbul male and a Black-crested Yellow female (*Pycnonotus jocosus* × *P. dispar flaviventris*). These birds had been nesting for several years, but so far no young had been reared. The hybrid is brown with a greenish wash on the tail and wings ; the head, crest, and neck are black.

* * *

Dr. E. Beraut writes from Rio de Janeiro : " On my return from Europe in August the weather was not good and I could only make a few trips in search of new Humming Birds. Following Professor J. Berlioz's directions, I went to the plateau of Minas Geraes to look for *Augastes superbus*, but I did not find it, although it was the exact time when he had seen it there. But on the mountains I found by luck large numbers of *Stephanoxis delalandei* on the eucalyptus trees in bloom ; I have now five in my aviary, it is a beautiful species. I also caught some *Phaestornis pretrei* and *Glaucis tomineo* (*hirsuta*). I now possess twenty-three species in perfect health. I have kept several over a year and some, such as Violet-ears (*Colibri*) and *Heliothrix*, more than six months. I have forty in a space 10 × 7 feet. It is an extraordinary thing that although they fly after one another at terrific speed they do not fight viciously, probably because they are so numerous. Of the Brazilian species, the Coquette (*Lophornis magnificus*) is still lacking ; I have not yet been able to locate it. I plan to go soon to the hinterland of Matto Grosso and to procure there some interesting specimens.

In December, on Monsieur Cordier's advice, I plan to visit northern Brazil, when I should find *Topaza pella* and *Heliactin cornutus*. In this way I hope to add to my collection and to keep it up by means of periodical trips. I have a few true pairs, but they have not yet made any attempt to nest. I believe the perfect condition of my Humming Birds is due to three main reasons ; complete suppression of Mellin's food ; daily addition of vitamins A, B, C, D ; daily supply of a large number of fruit flies which are indispensable to certain species, in particular *Heliothrix*, and in a still higher degree to all those which wag their tails—*Rhamphodon*, *Phaetornis*, *Pygmornis*, and *Glaucis*."

J. D.

* * *

LONDON ZOO NOTES

By John Yealland

A number of interesting birds have been added to the Society's collection during the past two months, some of them such old favourites as the Malachite (*N. famosa*) and Mariqua (*C. bifasciatus*), Sun-birds ; Black-cheeked (*Estrilda erythronotus*), Golden-breasted (*E. subflava*), Blue-breasted (*Uræginthus angolensis*), and St. Helena Waxbills.

All these, together with such notabilities as the Greater Amethyst Sun-bird (*Chalcomitra amethystina*) ; the White-bellied Sun-bird (*Cinnyris leucogaster*) ; the Crimson-breasted Shrike (*Laniarius atrococcineus*) ; the Cape Bulbul (the sub-species *Pycnonotus capensis nigricans*) which is new to the collection) ; a Pied Barbet (*Tricholæma leucomelas*) ; a White-eyebrowed Coucal (*Centropus superciliosus*) ; a Green-necked Touraco (*Gallirex porphyreolophus chlorochlamys*) ; Wattled Starlings (*Creatophora carunculata*), and some Long-tailed Rollers (*Coracias caudatus*) being received in exchange from Pretoria Zoo.

An interesting new sub-species is the pretty Gosling's Rock Bunting (*Fringillaria tahapisi goslingi*), a pair presented together with a Blue Rock Thrush (*Monticola solitarius*) by Mr. R. C. J. Sawyer.

A young Green Woodpecker (*Picus viridis virescens*) has been successfully established and, like the other birds already mentioned, may be seen in the Small Bird House.

Ostriches are again in the Gardens, six young ones having been received from Kenya and another welcome addition is a pair (?) of King Condors (*Sarcoramphus papa*)—young ones not yet in colour—presented by San Antonio Zoo.

Indian Darters (*Anhinga melanogaster*) ; Great White Herons (*Egretta alba*) ; Indian Wood Ibis (*Ibis leucocephalus*) ; Black-headed Ibis (*Threskiornis melanocephala*) ; Spot-billed Pelicans (*Pelecanus*

philippensis) ; Ceylon Serpent Eagles (*Spilornis cheela spilogaster*) ; a Wedge-tailed Eagle (*Uroætus audax*) ; a Great Skua (*Catharacta skua*) ; Chiloe Wigeon (*Anas sibilatrix*) ; Cinnamon Teal (*A. cyanoptera*) ; a Falcated Teal (*A. falcata*) ; Bahama Pintails (*A. bahamensis*) ; a Western Slender-billed Cockatoo (*Licmetis tenuirostris pastinator*) ; Lineolated Parrakeets (*Bolborhynchus lineolatus*) ; a Richard's Pipit (*Anthus richardi*), an uncommon visitant to this country ; a Southern Hill Myna (*Eulabes religiosus*), and Red Ground Doves (*Oreopelia montana*) complete a very attractive list of new arrivals.

Sad to say, the young King Penguin, after growing well and apparently thriving for a month, died suddenly from nephritis and anæmia.

The Black-footed now have two chicks ; earlier in the autumn they were earnestly engaged in nest making, carrying twigs and other material, with a very consequential air into their nesting kennels. A child's beret, accidentally dropped into their enclosure was immediately seized and borne off.

Two Satin Bower-birds, still in their green plumage, have commenced the building of a bower.

* * *

REVIEWS

THE PHEASANTS OF THE WORLD. By JEAN DELACOUR. *Country Life*. London, 1951. Price £7 7*s*.

The appearance of this most excellent monograph on the pheasants of the world will be universally welcome. William Beebe's monumental *Monograph of the Pheasants* appeared from 1918 to 1922 in four quarto volumes, but unfortunately for some years it has been out of print and practically unobtainable. In his foreword to Jean Delacour's book William Beebe writes : " After more than three decades there is abundant need for bringing pheasant lore up to date, and for publishing all recently acquired information concerning this group of splendid birds. No one is better fitted for this new undertaking than my very good friend Jean Delacour, and I am delighted that he has chosen to put into print this knowledge gained by himself and other ornithologists. The dominant feature in my earlier work was the direct observation of wild birds in their natural haunts, and it is this part of the monograph which possesses the greatest permanent value, unchanged by time. Fortunately this can now be ably supplemented by Jean Delacour's incomparable experience in breeding the rarer species in captivity and thus adding immeasurably to our knowledge of the life histories of these pheasants."

During the last twenty-five years new discoveries have been made,

fresh information gathered, and deeper knowledge gained ; relationships between species particularly are better understood. The present volume, as Jean Delacour states in his introduction, completes and brings up to date Beebe's monograph. It has a twofold purpose, to offer a summary of modern knowledge of systematics, life habits, and geographical distribution of the birds, and to supply the ever-growing numbers of pheasant lovers with necessary data concerning the birds in confinement, Jean Delacour's experience in keeping and breeding pheasants in captivity is, indeed, as Mr. Beebe, says, incomparable, and his collection of these birds at Clères, before the second world war, attained a level never surpassed. Mr. Delacour's many expeditions to Indo-China to collect and study pheasants in the wild made it possible for him to acquire a knowledge of these birds second to none, and on his very first trip he discovered a startling new species, the Imperial Pheasant.

The book opens with a most informative and detailed general account of pheasants and includes sections on history ; systematics ; life habits ; acclimatization ; housing ; feeding ; rearing ; procuring, transporting, and establishing pheasants ; and diseases. This general account is of the greatest value to aviculturists, and there is a wealth of information put at their disposal, including such details as the best methods of dealing with cock pheasants intent on murdering their wives, early ailments of chicks, construction of aviaries, and the different treatment required by different species.

This is followed by sixteen chapters on the sixteen natural genera into which the pheasants are divided, consisting of Blood Pheasants ; Tragopans ; Koklass ; Monals ; Junglefowls ; Gallopheasants ; Eared Pheasants ; Cheer Pheasants ; Long-tailed Pheasants ; True Pheasants ; Ruffed Pheasants ; Peacock Pheasants ; Crested Argus ; Great Argus ; Peafowls ; and Congo Peacock. A general description is given of each genus and a map showing distribution is included. This is followed by a detailed and clear description of each species. Whenever a species has been kept in captivity a full account of general habits and captivity is added. The volume is profusely illustrated with thirty-two most excellent plates by J. G. Harrison, sixteen in colour and sixteen in black and white.

In his introduction Jean Delacour points out that the future of pheasants in the wild is very problematic owing to the ever-easier penetration and the threatened destruction of their natural habitats, the perfecting of weapons, and the changes in the food habits of native populations. He believes that within the next fifty years a large number of species will undoubtedly become extinct if appropriate measures are not immediately taken to save them, and points out that at present the difficulties in enforcing regulations in Asia are very great. He concludes : " Fortunately nearly all pheasants can be kept and reared

in captivity, and many may be established in coverts as game birds. It is the duty of both private individuals and public institutions to organize their propagation more carefully and to do their utmost to preserve these remarkable birds for the joy, welfare, and interest of future generations."

These words should be taken to heart by every serious aviculturist, and all those who have the possibility of maintaining these beautiful birds should do their utmost to assist. The Pheasant Registry, organized by the Avicultural Society to facilitate the formation of pairs by the exchange and loan of birds, has done much to this end, and it is hoped that its usefulness will continue and increase.

In these hard times seven guineas is a great deal of money, and many readers of the AVICULTURAL MAGAZINE will be wondering whether they can afford to buy this magnificent book, but if they are really keen on keeping these popular and beautiful birds the question really resolves itself into whether they can afford *not* to buy the book.

P. B-S.

WILD WINGS. By FRANK STUART. Fanfare Press, Ltd., London, W.C. 2. Price 14*s*.

In the publisher's preface we are told that although this story (of a year in the life of a Pintail) is not a textbook on Ducks, " the information is there." They naïvely add that ". . . sometimes the information is startling . . ." It is indeed ! The reviewer was more than startled to learn that young Pintails gape for food like young Passerines, and that both parents bring food to them. That both duck and drake collect " softest mosses " from a distance to build their nest. That young ducklings are *taught* (with the aid of corporal punishment for the recalcitrant or slow-witted) to *crouch motionless* when their mother gives the alarm. That a day's walking overland suffices to cure a thoroughly " oiled " bird, and that Pintails protect themselves from a fox (who might otherwise swim underwater after them) by clustering beneath the perch of a Snowy Owl.

That these and many other equally fantastic statements are intermixed with (misinterpreted) accounts of actual behaviour patterns and a moving if rather ornate style of writing will, one fears, render them the more capable of misleading the general public.

The author acknowledges his indebtedness to officers and members of the B.O.U., the B.T.O., the Edward Grey Institute, the International Wildfowl Research Institute, and other organisations. One wonders if they will feel a reciprocal indebtedness for being thus connected with this book !

D. G.

CORRESPONDENCE

UNUSUAL OCCURRENCES AMONG THE BREEDING BIRDS AT DUDLEY ZOO

Two rather unusual occurrences among the breeding birds this year at Dudley Zoo may be worth recording.

The first is the instance of a cock Cockatiel whose mate died three days after the young hatched. Alone and unaided, the cock has successfully reared four beautiful young ones. I have often heard of hens bereft of their husbands carrying on and rearing their brood, and cocks doing the same thing under similar circumstances, provided the young are well grown and feathered sufficiently not to require brooding at night, but in view of the fact that a cock Cockatiel normally only broods during the day, I think his effort in doing the whole job almost from the time the young hatched, is a particularly noble one.

The other instance is a typical example of how the most unlikely looking birds often make the best parents.

We have here a very nice hen Golden Mantled Rosella, and in the absence of nothing better this spring, she was given a particularly undersized, moth-eaten looking husband in the shape of an ordinary cock Red Rosella. This bird also plucks himself badly, so I was afraid that even if young were produced, they would almost certainly be plucked in the nest. In this I was wrong, as they have produced three of the finest young Rosellas it has been my luck to see.

Incidentally, these being Zoo-bred birds, and reared to the accompaniment of the screams of children, and the constant banging on the wire-netting of their aviary from the public in general, left the nest and behaved without any of the usual panic of young Parrakeets just fledging. Moreover, it is quite a joy to be able to stand in front of their aviary and watch the parents feeding their young, completely indifferent to one's presence—a thing I have seldom had the opportunity of doing in the past, without hiding behind bushes, peering through a knot-hole in the wood of an aviary, or through field glasses at about 100 yards range!

I am also trying this year the experiment of establishing some Golden Pheasants loose about the Zoo grounds, by rearing the chicks in my garden under bantams, and allowing them complete freedom, except for the clipping of one wing. This does not prevent them jumping up into the trees to roost at night, but so far, to date (mid-September), they all turn up at meal times on the lawn when I rattle the food tin.

DUDLEY ZOO, WORCS. D. H. S. RISDON.

A SUGGESTION

Most aquarists are now using a species of nematode worm which belongs to the order *Enchytræa*), a small white worm about one inch long and of the thickness of a piece of thread. Unlike mealworms, their propagation is extremely rapid, a few dozen of them soon forming colonies of many thousands.

The breeding is extremely simple, a shallow box is filled with crumbly soil, or better still peat, the little worms are added together with a few tablespoonfuls of oatmeal or even breadcrumbs, and the whole is kept damp and shaded. Frost would probably kill the whole colony, but excessive heat is not appreciated, a temperature of 55° to 65° being about the ideal. Food must be added every few days as it quickly disappears with growth of the worms.

I have two such boxes in one of my greenhouses and I have frequently noticed that one very tame Robin was always hopping around one or other of these boxes. Finally I gave him a good helping of peat and worms and within a matter of seconds every worm had been picked out and swallowed. It then struck me that here we had a live food which was much more wholesome than the leathery mealworm and which might be ideal for the more delicate softbills such as some of the Robins, Niltavas, and even possibly Sunbirds.

I am sending a small quantity of these white worms to our President and also to Mr. Dulanty, and perhaps one or other of these will kindly report on his experiences. White worms can be purchased at any of the many shops which deal in tropical fish.

DELMONDEN MANOR, HAWKHURST, KENT. MAURICE AMSLER.

LIST OF EXCHANGES AND PRESENTATIONS

Members are reminded that the publications presented or received in exchange are deposited in the Library of the Zoological Society of London, Regent's Park, London, N.W. 8.

Great Britain .	*British Birds*, *Cage Birds*, *The Ibis*, *Our Zoo News* (Chester Zoological Gardens).
Australia .	*Australian Aviculture* (official organ of the Avicultural Society of Australia and the Avicultural Society of South Australia).
Belgium . .	*Le Gerfaut*, *Le Monde Avicole*, *Natuurwereld*, *Ornithologie*, *Zoo* (La Societé Royale de Zoologie d'Anvers).
Denmark .	*Dansk Ornithologisk Forenings Tidsskrift*, *Stuekultur*.
France . .	*L'Oiseau*, *La Terre et la Vie*.
Germany .	*Die Gefiederte Welt*, *Die Vogelwarte*, *Die Vogelwelt*, *Ornithologische Abhandlungen*, *Ornithologische Berichte*, *Ornithologische Mitteilungen*.
Netherlands .	*Ardea*, *Onze Vogels*.
South Africa .	*The Bokmakierie*, *The Ostrich*.
Sweden . .	*Vår Fågelvärld*.
U.S.A. . .	*America's First Zoo* (Philadelphia Zoological Gardens), *Animal Kingdom* (New York Zoological Society), *The Auk*, *The Condor*, *The Wilson Bulletin*, *Zoologica*.
Yugoslavia .	*Glasnik* (Journal of the Ornithological Institute, Zagreb).

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CANDIDATES FOR ELECTION

F. Brookfield, 65 Plumpers Road, Tinsley, Sheffield, Yorks. Proposed by Miss K. Bonner.

The Marquis Fioravanti, Bellosguardo 14, Florence, Italy. Proposed by J. Yealland.

John J. Gregory, 125 Cedar Hill Avenue, New Haven, Conn., U.S.A. Proposed by A. Frederick Sturgis.

F. T. Hunt, "Green Gables," Stanton on the Wolds, Keyworth, Notts. Proposed by Miss K. Bonner.

Frederick E. B. Johnson, 15 Mill Road, Impington, Cambs. Proposed by Miss K. Bonner.

Roland Labelle, 832 Rue Beaubien Est., Montreal, Canada. Proposed by Dr. W. E. Hurlburt.

L. Maurice Mason, Talbot Manor, Fincham, King's Lynn, Norfolk. Proposed by Miss K. Bonner.

Herbert E. Miller, "Westwater," Tedburn St. Mary, Nr. Exeter, Devon. Proposed by E. Wilford Smith.

J. E. Retief, 56 Lincoln Street, Bellville, Cape Province, South Africa. Proposed by Miss K. Bonner.

Stanley Smith, c/o Messrs. Henry Sotheran, Ltd., 2, 3, 4, and 5 Sackville Street, Piccadilly, London, W. 1. Proposed by Miss K. Bonner.

Whitney Straight, C.B.E., M.C., D.F.C., The Aviary, Windmill Lane, Southall, Middx. Proposed by J. Yealland.

A. W. Swann, "Compton House," Manor Road, Oadby, Leicester. Proposed by E. Wilford Smith.

Mrs. O. H. Wallin, 11543–36 N.E., Seattle 55, Washington, U.S.A. Proposed by Mrs. H. L. Schumacher.

T. Wilson, 216 Blockhouse Bay Road, Avondale S.W. 3, Auckland, New Zealand. Proposed by A. A. Prestwich.

NEW MEMBERS

The thirty-four Candidates for Election, proposed in the September-October, 1951, number of the Avicultural Magazine, were duly elected members of the Society.

DONATIONS

	£	s.	d.
D. Seth-Smith	10	0	0
Capt. C. Scott-Hopkins . .	2	2	0
D. M. Coward	1	1	0

MEMBERS' ADVERTISEMENTS

The charge for Members' advertisements is one penny per word. *Payment must accompany the advertisement, which must be sent on or before the 15th of the month to* A. A. Prestwich, 61 Chase Road, Oakwood, N. 14. *All members of the Society are entitled to use this column, but the Council reserves the right to refuse any advertisements they consider unsuitable.*

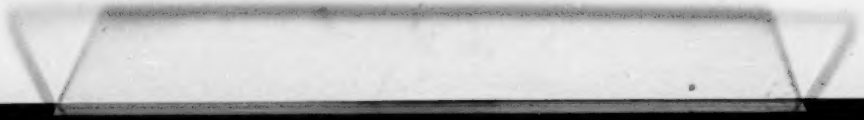
The Keston Foreign Bird Farm, Ltd., Brambletye, Keston, Kent, require a General Manager, age 35 to 45. Must have a knowledge of aviculture, particularly the keeping of foreign birds, and be used to taking full responsibility. Write, giving full particulars and stating salary required.

FOR SALE

1951 Carolinas, £6 per pair; drakes, £4 each.—Dr. M. Ambler, Delmonden Manor, Hawkhurst, Kent.

Demoiselle Cranes, true pair, pinioned and in perfect condition, £25.—Captain A. Clarence, Nunton House, Nr. Salisbury.

Avicultural Magazine, 1946–1951 (inclusive). What offers?—Mrs. Dennis, Nutbourne, Pulborough, Sussex.



CANDIDATES FOR ELECTION

F. Brookfield, 65 Plumpers Road, Tinsley, Sheffield, Yorks. Proposed by Miss K. Bonner.

The Marquis Fioravanti, Bellosguardo 14, Florence, Italy. Proposed by J. Yealland.

John J. Gregory, 125 Cedar Hill Avenue, New Haven, Conn., U.S.A. Proposed by A. Frederick Sturgis.

F. T. Hunt, "Green Gables," Stanton on the Wolds, Keyworth, Notts. Proposed by Miss K. Bonner.

Frederick E. B. Johnson, 15 Mill Road, Impington, Cambs. Proposed by Miss K. Bonner.

Roland Labelle, 832 Rue Beaubien Est., Montreal, Canada. Proposed by Dr. W. E. Hurlburt.

L. Maurice Mason, Talbot Manor, Fincham, King's Lynn, Norfolk. Proposed by Miss K. Bonner.

Herbert E. Miller, "Westwater," Tedburn St. Mary, Nr. Exeter, Devon. Proposed by E. Wilford Smith.

J. E. Retief, 56 Lincoln Street, Bellville, Cape Province, South Africa. Proposed by Miss K. Bonner.

Stanley Smith, c/o Messrs. Henry Sotheran, Ltd., 2, 3, 4, and 5 Sackville Street, Piccadilly, London, W. 1. Proposed by Miss K. Bonner.

Whitney Straight, C.B.E., M.C., D.F.C., The Aviary, Windmill Lane, Southall, Middx. Proposed by J. Yealland.

A. W. Swann, "Compton House," Manor Road, Oadby, Leicester. Proposed by E. Wilford Smith.

Mrs. O. H. Wallin, 11543–36 N.E., Seattle 55, Washington, U.S.A. Proposed by Mrs. H. L. Schumacher.

T. Wilson, 216 Blockhouse Bay Road, Avondale S.W. 3, Auckland, New Zealand. Proposed by A. A. Prestwich.

NEW MEMBERS

The thirty-four Candidates for Election, proposed in the September-October, 1951, number of the Avicultural Magazine, were duly elected members of the Society.

DONATIONS

	£	s.	d.
D. Seth-Smith	10	0	0
Capt. C. Scott-Hopkins . .	2	2	0
D. M. Coward	1	1	0

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AUSTRALIAN PARROTS IN CAPTIVITY

A series of articles by Alan Lendon published in the Avicultural Magazine. A full account of 60 species of Australian Parrots is included in the book which deals where possible with the author's personal experiences in keeping them in captivity in South Australia.

There are one coloured and seven photographic plates. Stiff paper cover. Price 7s. 9d., post free. Published by the Avicultural Society, and obtainable from the Hon. Secretary, 61 Chase Road, Oakwood, London, N. 14.

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